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ABSTRACT

Adoption of instructional communications technology meets with resistance and even opposition in higher education; however, by anticipating and estimating the resistance to change, instructional innovators can gain compliance from the colleagues they are trying to help. Resistance to change in education is caused by many factors both real and perceived, including mediocre quality of the technological product, inappropriateness for classroom use, the inertia of the education system, bureaucratic red tape, and individual prejudice. In aiming for compliance from those who resist educational change, innovators are aiming for adoption of educational technology. To attain adoption and integration, innovators should help, offer service to, and even nurture the resistant colleagues. (DB)

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Barriers to Adoption of Instructional Communications Technology in Higher Education

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Barriers to Adoption of Instructional Communications Technology in Higher Education

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Background

Adoption of instructional communications technology meets with resistance and even opposition in higher education. While clearly some institutions of higher learning embrace and even solicit instructional communications technology, more than a two-thirds majority will do little more than endorse it in principle. This paper is dedicated to the problem facing most innovators. The paper addresses those innovators of instructional communications technology in higher education. The focus of the paper will be on the resistance to innovation that innovators of communications technology face. Suggestions are offered to minimize, if not overcome, the resistance to innovative communications technology in the context of higher education.

Anticipating and estimating resistance is used as the strategy to minimize and overcome resistance. Resistance should be seen in the context of persuasion or social influence in general. Persuasion or social influence does not refer to power or coercion. Choice is the context for persuasion. In higher education, encouraging innovation requires that the basis for choosing be legal and ethical. The strategy for change or innovation suggested in this paper is based on both legal and ethical restraints. Only legal and ethical grounds for choice are endorsed. In short, the strategy for innovation advanced in this paper is humane. Nonetheless, it is a strategy.

As conceptualized in this paper, resistance stems from Kurt Lewin's (1951,1976) field theory. The developed strategy is derived from current persuasion research that has been done under the titles of compliance. Because of the actional base suggested by compliance, the suasive strategy suggested in this paper orients itself by compliance. Instruction has an actional bias and so does the strategy advanced here. As instructors, we gain or fail to gain compliance when innovating instructional communication technology. We gain or fail to gain compliance in a context of resistance. Our compliance-gaining strategies should be considered in light of compliance-resistance. The strategy advocated in this paper involves winning compliance in light of resistance. By considering what kinds of resistance will be faced and by determining the degree of the resistance that will be faced, we can formulate our positive strategy of gaining compliance. We should consider indecisiveness, objection, confusion, opposition, ignorance, fear, and the like as sources of potential and (possibly) real resistance. In the light (or perhaps shadow) of the anticipated and estimated resistance, we may plan our course of innovative action.

To improve the frequency and quality of use of instructional communications technology, we should consider the resistance we will encounter to our goals or instructional objectives and our means or instructional methods. The resistance to curriculum and instructional methods must be taken into account to minimize and overcome resistance from colleagues we aim to help. We must incorporate into our compliance-gaining strategy the notion that our decent intentions to innovate for the benefit of education may be ignored or opposed.

Review of Relevant Research

While the communication research has paid adequate attention to compliance-gaining, there is comparatively a paucity of research on compliance-resisting (Reardon, Sussman, and Flay, 1989). Both

compliance-gaining and compliance-resisting urge others to do or accept what might otherwise not be done or rejected. Using compliance-resistance as a strategy suitable to compliance-gaining in the problematic situation at hand with failure to gain compliance as a real option, compliance-resistance is construed in a manner similar to the definition of compliance-resistance offered by McLaughlin, Cody, and Robey (1980). While they see compliance-resistance as "verbal attempts by a target to gain the agent's acceptance of the target's unwillingness to comply," (p. 749) we see it as "symbolic efforts by resistant students and colleagues to gain the acceptance of the innovator of the unwillingness of the resistant students and colleagues to comply." In other words, students and colleagues who do not comply with our request to change will let us know. We must then convert their resistance into compliance.

Resistors will use various symbolic strategies to avoid compliance. Non-negotiation or account-free replies (Fiordo, 1990) would be one such strategy when the feelings of the innovator are not a concern to the resistor. When the feelings of the innovator are a concern to the resistor, a prosocial strategy of resistance will be employed, such as justification (McLaughlin et al., 1980). Rationales or accounts are sometimes offered (McQuillen and Higginbotham, 1986). Whether the accounts come in the form of excuses, concessions, justifications, or refusals, resistance can be expected (Cody and McLaughlin, 1985). Our kindly innovative requests are predictably met with kindly resistance. Our reproachful innovative requests are predictably met with angry resistance (McLaughlin, Cody, and O'Hair, 1983). Also, resistance and rejection depends on variations in the relationship between the innovator and the student or colleague as well as the situation (Reardon, Sussman, and Flay, 1989).

The point to note is the the dependent measure is compliance-gaining, not compliance-resistance (Trenholm, 1989, p. 136). Compliance-resisting is the independent measure. Compliance-resistance serves as our suggested means to our end of compliance-gaining within the confines of ethical and legal contexts. We must seek out the grounds for resisting our humane instructional objections. For example, we may encounter simple rejection of our requests, a state of resistance pertaining to typical conduct that is other than what we are requesting, an expression of attitudes or beliefs discrepant with our requests, rejection of us as the innovators, or avoidance of us altogether (Reardon, Sussman, and Flay, 1989).

Strategies

In aiming for compliance, we aim for adoption. Just as we are innovators, some of our colleagues are as well. They seek out the new and crave to adopt and integrate it. We also encounter colleagues or students who adopt early yet are not innovators. The majority of our resistors will be early or late adopters. Some will adopt eventually, but we can see them generally as laggards. Another small group will be resistant to the end. The die-hards (or anti-innovators or super-resistors) would fall into this small group. Strategically, if we have a class or department with a concentration of die-hards, our efforts can be dispiriting beyond recovery unless we keep the rationality of a normal population curve in mind. Figure 1 is just such a rational reminder of which phase of the normal distribution we are facing in our classes or departments.

{Insert Figure 1 about here}

In a sound classic on innovation in the field of education, Havelock (1973) suggests that adoption be divided into six phases:awareness, interest, evaluation, trial, adoption, and integration. The six phases suggest what we might expect from resistant students and colleagues. Advice is also offered the innovator to facilitate movement from one phase to the next. To attain awareness and interest, innovators should promote and inform the resistors of the communications technology. To elicit positive evaluation and get the resistors to try or test the suggested innovation, innovators should demonstrate and train the resistance

out of them. To attain adoption and integration, innovators should help, offer service, and even nurture the resistant student and colleagues (pp. 112-118).

One educational psychologist who has specialized in CAI (computer assisted instruction) gains adoption and integration by continually encouraging students of the innovative technology to make mistakes. The desire for perfection and the fear of imperfection precludes students advancing toward adoption and integration of the innovative technologies. Mistakes are seen as feedback that is constructive and educational without dire consequences. After all, the computer is but a machine and does not get angry with a user who has to repeat a procedure five, ten, or twenty times before getting it right. A human being in the role of teacher may have less patience than the computer (Zwirner, 1990).

Non-Adoption Of Technology

The effects of technology in instruction in higher education have not been experienced to any extent many feel is possible or desirable. Unlike instructors and teachers at other levels of education, those teaching in post-secondary institutions have apparently failed to avail themselves of facilities, services and instructional innovations which could ultimately improve the quality of their instruction. In most cases it cannot be for lack of effort as few higher education institutions are without instruction and communication media personnel and agencies which boast facilities and trained personnel who are at the disposal of individual faculty members. Further, it cannot be for lack of value as it has been determined that integrating media into instruction can have many substantive benefits (Schieman, 1990; Heinich, Molenda & Russell,1989).

Many reasons have been put forward for this. If one were to attend educational media conventions or browse through the professional literature in the field, a recurring theme would be be apparent. A great deal of discussion is directed to this matter and many suggestions are provided which deal with the problem of how to increase the utilization of strategies involving instructional media. At the same time another recurring theme deals with what the future holds in the way of bigger(or smaller) and better innovations involving media for the field of education. The reasons for the problem emanate from a variety of sources, including higher education faculty, administration and also from instructional technologists themselves. It is worthwhile to note that many of the users targeted the innovations applaud their non-use, citing their lack of successful applications as a rationale for non-adoption or at least its discontinuance.

With regard to the former theme, two popular reasons are put forward to explain the lack of dissemination of ideas and methodologies, especially instructional television. One common reason given is the mediocre quality of the product. A second reason is often inappropriate classroom use. Both of the above are potentially powerful deterrents to effective use of media. Upon closer examination these reasons turn out to be symptoms and do not really approach the essence of the problem. The former can of course be true, but this medium has now developed greatly is generally regarded as a very sophisticated teaching and learning tool. What is important is that instructors and teachers take the time to select and preview the material before using it in the classroom. Many excellent ETV and ITV programs exist but languish on videotape and film library shelves. Inappropriate use can also be addressed by seeking out assistance from those trained in its use. It may not be be that the application of of the medium is all bad but rather a matter of the instructor"s access to the resources, when and where they are required, and the frequent inconvenience of using them. A basic question at this point may be whether the individual instructor has, in fact, been encouraged to use those resources which are available. This brings the discussion to fundamental issues and conditions which have to be addressed before effective, wide-spread use can and will be made if the variety of media already in existence and for the most part available for instructional use.

Barriers to change

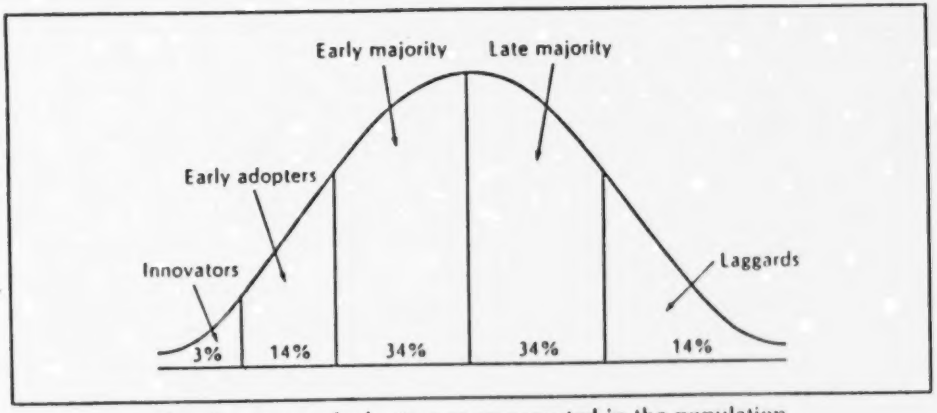
Many barriers and obstacles exist. It is not the intent of this article to cover all of them, rather only those which can be considered to be of major importance. Jwaideh and Marker (1973) identified those barriers common to adoption of innovations in education as well as other areas. They state that a major obstacle to the introduction and dissemination of instruction and communication media in higher education is the inertia of the education system itself. There are few if any incentives for collage professors to change their methods. The institutions themselves seem to be organized in such a way as to resist all change, not only those concerned with improving instruction. Colleges too often appear to have adopted an innovation but often this proves to be superficial. The educational bureaucracy neutralizes new ideas and applications with apparent ease through budget cuts, budget shifts, changing priorities or pressure from individuals and groups with vested interests in not changing. In many instances this inertia is fueled by strong prejudices against technology.

Teaching has traditionally been a personal process, an intimate relationship between instructor and student. The instructor was the dispenser of knowledge and the student the passive receiver of the knowledge. Technology has changed this. The various instructional media can present some information in a more effective and efficient manner than a human being. Technology can bring remote situations and experiences into the classroom in ways that no individual can. Technology can involve the learner in the learning experience, making them active, interacting partners in the process. Technology can accommodate the needs of individual learners, presenting information at a rate and level of complexity consist with the needs of the learner, with instant capability to review and repeat complex and difficult concepts. Technology can be infinitely patient with the learner. Technology can provide a variety of experiences, from visually-based material such as film, video, computer graphics to auditory-based material such as taped addresses and speeches of important people and events. Technology can provide for tactile (kinesthetic) experiences and combinations of the above. The point is that technology can make instruction interactive. Technology shifts the responsibility for learning away from the teacher to the student. This then is the real threat to the individual instructor, and a difficult barrier to break down.

Technology as a threat to institutionalized power.

Higher education systems have traditionally been labor intensive, revolving around individual instructors and administrative bodies. The power of the educational establishment has traditionally rested with the faculty, their professional associations and the faculty-based central administration. The introduction of capital-intensive technology-based systems surely threatens these power relationships and therefore are often opposed by both.

The barrier presented by the power alignments in education has been delineated by Heinich and Ebert (1976) and by Heinich (1984). These authors argue that technology oriented instruction threatens the base of the present education system. The base to which they refer involves the fundamental premises that define operational relationships and invested authority. The more comprehensive the technology, they argue, the greater is the potential threat. Heinich and Ebert further suggest that when technologies become sophisticated enough to offer a true alternative to traditional instructional methods, they then have the potential to become the new power base of the educational system. It then follows that if the base can be replaced, the superstructure of the old base will rally to prevent the change from occurring. It can possibly be the case we see in many higher educations institutions today where individuals in power are generally not not the adopters of technology. Further it may also be true that individuals who have embraced technology are by design prevented from rising up the power ladder. It is the case that many administrators of technology departments on college campuses are holders of staff or non-teaching board appointments.



The five types of adopters as represented in the population.

FIGURE 1